

ON NEW AND LITTLE-KNOWN BUTTERFLIES FROM
THE INDO-MALAYAN, AUSTRO-MALAYAN, AND
AUSTRALIAN REGIONS.

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[With Plates X, Y, Z, & AA.]

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Family NYMPHALIDÆ.

Subfamily DANAINÆ.

1. EUPLŒA (*Crastia*) CORE, Cramer, pl. X, figs. 1, 2, ♂.

Papilio core, Cramer, Pap. Ez., vol. iii, pl. cclxvi, figs. E, F (1780).

The specimen figured is from Sikkim, and has been kindly lent to me by Mr. Paul Möwis. The left-hand side of the insect is much smaller than the right-hand side, so that at first sight it appears to be a bilateral gynandromorphous specimen; but on examination closely the forelegs are found to be both masculine, and there is the usual male brand on both forewings in the middle of the submedian interspace, the brand on the smaller left-hand wing being only 4 mm. in length, while that on the opposite wing is 9 mm. long, or more than twice the length of the other. The number of spots on both pairs of wings on the upperside is the same, but on the underside the larger forewing has three additional violet spots, one each in the first and second subcostal, and the third in the lower discoidal, interspaces. On the larger hindwing also there are five additional violet spots, a large apical one in the subcostal interspace, and seven instead of three, placed one in each interspace beyond the discoidal cell. The specimen is altogether a very remarkable one; it is not an ordinary aberration or "sport," nor is it gynandromorphous, so it is difficult to know how to classify it. Owing to the difference in the size of the white markings on the upperside of the forewing, the smaller left-hand wing may be said to be true *E. core*, while the larger right-hand wing, with its disproportionately larger markings, is a typical *E. vermiculata*, Butler, the latter name applying in the writer's opinion to the dry-season form of *E. core*, true *E. core* being the wet-season form (*vide* this Journal, vol xi, p. 214, n. 7 (1897).

2. EUPLŒA (*Trepsichrois*) LINNÆI, Moore, pl. X, figs. 3, 4, ♂.

Trepsichrois linnæi, Moore, Proc. Zool. Soc. Lond., 1895, p. 286, n. 1, pls. xxix, fig. 4, female; xxx, fig. 1, male.

The remarkable aberration or "sport" here figured was taken in Sikkim, and has been kindly lent to me by Mr. Paul Möwis, of Darjiling. From typical specimens of the species from the same region it differs in the shape of the forewing, which has the outer margin from the lowest discoidal nervule to the apex produced and truncated, and the neuration is highly abnormal, not being even the same on both wings; the left-hand wing has five instead of the normal two discoidal nervules, numbers one, three, four, and five counting from behind forwards arising from the disco-cellular nervules, and number two arising from number one close to its base; in addition to this, numbers three and five give off anteriorly near the middle a short spur or additional veinlet; the subcostal nervure instead of reaching the outer margin of the wing just below the apex of the wing stops short a little before reaching the outer margin; lastly the discoidal cell is abnormally broad outwardly, with several additional disco-cellular nervules closing it, from which spring two (instead of the normal one) spurs running a short distance into the cell: the right-hand wing also has five discoidal nervules, but they differ from those in the opposite wing, in that number five does not give off a spur, while number three instead of giving off a spur anteriorly does so posteriorly, which spur at its apex bifurcates and is continued a short distance right and left at right-angles to its basal portion; the subcostal nervure is the same as in the opposite wing, its terminal portion (often called the fifth subcostal nervule) not reaching the outer margin. The left-hand hindwing (when the specimen is turned once) is abnormal, as it has two instead of one discoidal nervules, and the discoidal cell is unusually broad; the right-hand wing also possesses this extra veinlet, but in addition it gives off anteriorly a third discoidal nervule. The markings also are abnormal, the forewings on the upperside having each six bluish-white spots beyond the discoidal cell instead of three, the three additional spots owing their existence to the presence of three additional internervular interspaces, there being three extra discoidal nervules; these spots all reappear on the underside of the wings, but are as usual much smaller than on the upperside. The hindwings on the upperside are normal; but on the underside the discoidal cell bears outwardly four bluish-white dashes; normally there is one or at most two such markings; the submarginal, marginal, and discal series of dots and streaks are also more numerous

than usual, as there is an additional discoidal interspace on one side and two on the other.

The coloured drawing shows the upper- and undersides of the left-hand wings only; the uncoloured drawing shows the underside of all the wings.

Subfamily SATYRINÆ.

Genus MYCALESES, Hübner, subgenus PHYSCON, nov.

MALE. FOREWING, *costa* regularly and evenly arched; *apex* well rounded; *outer margin* almost straight, slightly convex only; *anal angle* rounded; *inner margin* a little convex; *costal nervure* swollen at the base, ending on the *costa* far beyond the apex of the discoidal cell; *first subcostal nervule* arising about one-fourth before the end of the cell, terminating on the *costa* about opposite to the origin of the third subcostal; *second subcostal* originating far beyond the end of the cell, ending on the *costa* at about opposite to the origin of the fourth subcostal; *third subcostal* arising about midway between the second and the fourth, terminating on the *costa* well before the apex of the wing; *fourth subcostal* long, terminating on the *costa* before the apex of the wing; terminal portion of the *subcostal nervure* longer than the fourth subcostal nervule, ending on the outer margin below the apex of the wing; *upper disco-cellular nervule* short, straight, upright; *middle disco-cellular* concave, strongly inwardly oblique, twice as long as the upper disco-cellular; *lower disco-cellular* very long, at first strongly inwardly oblique, then boldly curving round towards the outer margin, the posterior portion strongly outwardly oblique; *median nervure* swollen at the base; *third median nervule* arising at the lower end of the cell, strongly curved; *second median* arising long before the lower end of the cell; *first median* arising a little beyond the middle of the median nervure; *submedian nervure* swollen at the base, straight; a large tuft of black hairs arises from the middle of the sutural area on the upper surface of the wing; these hairs are directed outwards and forwards, their tips lying on the submedian nervure. HINDWING, *costa* arched at base, then slightly convex to the apex of the wing; *apex* acute; *outer margin* angled at the termination of the third median nervule, very slightly scalloped; *anal angle* rounded; *abdominal margin* convex; *præcostal nervure* simple, concave, directed towards the apex of the wing; *first subcostal nervule* curved, arising well

before the apex of the cell, terminating on the costa far before the apex of the wing; *second* subcostal terminating at the apex of the wing; *discoidal cell* long, reaching to about the middle of the wing; *discocellular nervules* sinuous, outwardly oblique, the *upper* about half the length of the lower; *third median* nervule very strongly curved throughout its basal half; *third* and *second* medians arising together just beyond the lower extremity of the cell; *submedian* and *internal nervures* straight; a tuft of long ochreous hairs arises at the base of the cell on the upperside of the wing, and is projected outwards and forwards. *Eyes* hairy. *Antennæ* a little less than half the length of the costa of the forewing, with a lengthened rather slender club. Type, *Mycalesis* (*Phycon*) *pandæa*, Hopffer.

Mr. Moore in Trans. Ent. Soc. Lond., 1880, p. 155, when breaking up the Asiatic species of *Mycalesis* into subgenera, was unacquainted with *M. pandæa*, Hopffer, or he would probably have made a new genus for its reception. As far as I am aware, only two of his genera—*Lohora* and *Loesa*—have the second subcostal nervule of the forewing emitted beyond the apex of the discoidal cell as in *M. pandæa*; but I am unacquainted with his genus *Nasapa*,* in the diagnosis of which no reference is made to the position of this veinlet. *Lohora* has no secondary sexual characters at all on the forewing, while *Loesa* has a glandular patch of androconia on the underside of that wing, which is entirely lacking in *Phycon*, while *Phycon* has a tuft of hairs on the sutural area of the forewing on the upperside, which is found in a different form in the subgenera *Virapa*, *Samuntra*, *Gareris*, *Satoa*, *Saularga*, *Dalapa*, *Suralaya* and *Orsotricena*, but not in *Loesa*. It would appear therefore that *Phycon* has secondary sexual characters in the male on both wings as in Mr. Moore's Group I (l. c., p. 155), while as regards the neururation of the forewing it agrees with one genus in his Group II (l. c., p. 161), and with his Group III (l. c., p. 177).

3. MYCALESIS (*Phycon*) PANDEA, Hopffer, pl. Y, fig. 9, ♂.

M. pandæa, Hopffer, Stet. Ent. Zeit., vol. xxxv, p. 39, n. 116 (1874); id., Moore, Trans. Ent. Soc. Lond., 1880, p. 177; *M. deianirina*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xlii, p. 117 (1897).

HABITAT: Celebes (*Hopffer* and *Moore*); Toli Toli, North Celebes, Nov.—Dec., 1895, H. Fruhstorfer (*Fruhstorfer* and *coll. de Nicéville*).

* Herr George Semper in Schmett. Philipp., p. 55 (1887) sinks the genus *Nasapa* under *Nebdara*. The latter has the second subcostal nervule of the forewing emitted before the end of the discoidal cell.

This species has a remarkable superficial resemblance to *M. (Lohora) ophthalmicus*, Westwood, *M. (Lohora) dexamenus*, Hewitson, *M. (Lohora) dinon*, Hewitson, *M. (Lohora) deianira*, Hewitson (= *M. dora*, Hewitson), all of which occur in the same island; but the secondary sexual characters of the male will distinguish that sex from all these. The female is unknown, and will probably be difficult to discriminate. Mr. Francis A. Heron of the British Museum has kindly examined the drawing here reproduced, and informs me that it does not quite agree with Hopffer's description of his unique male example, but that it certainly represents the *M. deianirina* of Fruhstorfer, described from Toli Toli in North Celebes. There can be but little doubt, I think, that Hopffer's and Fruhstorfer's species are one and the same. Herr Fruhstorfer has at my request compared the types of the two species in Berlin, and has kindly furnished me with the following note regarding them:—" *M. deianirina* is almost a synonym of *M. pandæa*, at best it is only a local race. The type of the latter species bears the unsatisfactory label 'Celebes, A. B. Meyer.' *M. deianirina* differs, as also does a second specimen in my collection, from *M. pandæa* in having waved instead of straight marginal and submarginal lines on the underside of the forewing, and those lines on the hindwing are black instead of brown; the apex of the hindwing bears a lilac band, which is not found in *M. pandæa*; my species has eight while Hopffer's species has six ocelli on the hindwing; my species has broader and darker brown median lines on both wings than *M. pandæa*." I do not understand M. Fruhstorfer's remark that *M. pandæa* has six ocelli and *M. deianirina* eight on the hindwing, as my specimen has only four.

Subfamily ELYMNINÆ.

4. ELYMNIAS (*Melynius*) EXCLUSA, de Nicéville, pl. X, fig. 5, ♂.

E. (Melynius) exclusa, de Nicéville, Journ. A. S. B., vol. lxxi, pt. 2, p. 631, n. 68 (1898).

HABITAT: Bali, 2,000 to 4,000 feet, March, 1896 (*Doherty*).

EXPANSE: ♂, 3·0 inches.

DESCRIPTION: "MALE. Differs from the same sex of *E. casiphone prætextata*, Fruhstorfer, from the low country of Bali and from Lombok, in having the UPPERSIDE of the *forewing* entirely deep uniform velvety black, without markings, in that species the ground-colour is fuscous becoming outwardly much paler, with a submarginal series of six bluish-

white spots. *Hindwing* differs also in having the ground-colour much darker, with a submarginal series of four prominent transversely-elongated ochreous-white spots placed between the veins, these being obsolete in that species; it is heavily clothed on the disc with long black hairs. *UNDERSIDE*, both wings much as in that species. Differs from *E. erinyes*, de Nicéville,* from the Battak Mountains of North-east Sumatra, in the forewing being shorter, less elongated, and on the upperside of the hindwing in not having a series of perpendicularly-elongated pale streaks between the veins. Differs from *E. kamara* Moore,† from Java (*Moore*), and Lombok (*Fruhstorfer*), only in having on the *UPPERSIDE* of the *hindwing* a single series of narrow ochreous-white spots, instead of a second and third series anterior to the first extending towards the base of the wing. *FEMALE* unknown."

"In de Nicéville and Elwes' collections are single males." (*de Nicéville*, l. c.).

5. *ELYMNIA* (*Melynia*) *NEOLAI*, n. sp., pl. X, fig. 6, ♀.

Elymnias lais, Kheil (*nec* Cramer), Rhop. Nias, p. 20, n. 29 (1884).

HABITAT: Nias Island, near Sumatra.

EXPANSE: ♂, 2·9; ♀, 3·3 inches.

DESCRIPTION: *MALE*. Almost exactly the same as true *E. lais*, Cramer, from Java, but on the upperside of both wings the pale greenish-ochreous streaks between the veins are somewhat narrower and darker. On the underside of both wings it differs from *E. laisidis*, de Nicéville,‡ from North-east Sumatra, in having all the dark markings much larger and of a deeper colour, therein agreeing with *E. lais*. *FEMALE*. *UPPERSIDE*, *forewing* has a large triplicate subapical white patch divided only by the veins and strongly glossed with violet, this gloss barely extends beyond the white patch. In *E. laisidis* the violet gloss is of much greater extent, and reaches to the submedian interspace, and is also much wider, reaching the discoidal cell. *E. lais* has no violet gloss whatever. In outline it is nearest to *E. lais*, but the wing is rather longer, though it is not as long as it is in *E. laisidis*. The *hindwing* has the pale streaks between the veins less wide than in *E. laisidis*, still less wide than in *E. lais*.

* Journ. Bomb. Nat. Hist. Soc., vol. x, p. 19, n. 5, pl. R, figs. 9, *male*; 10, *female* (1895).

† Journ. Bomb. Nat. Hist. Soc., vol. x, n. 20, pl. R, fig. 11, *male* (1895).

‡ Journ. A. S. B., vol. lxiv, pt. 2, p. 390, n. 96 (1896).

Described from five males and one female, all received from Mr. H. Fruhstorfer. I have figured for comparison the females of *E. laisidis* and *E. lais* on pl. Y, figs. 7 and 8 respectively.

Subfamily AMATHUSINÆ.

6. DISCOPHORA DEO, n. sp., pl. Y, fig. 10, ♂.

HABITAT: North Shan States, Upper Burma.

EXPANSE: ♂, 3·5; ♀, 4·0 and 4·2 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* deep indigo-blue. *Forewing* with a broad curved discal orange band, of nearly equal width throughout, its edges rather irregular, commencing on the costa broadly, and ending on the first median nervule, not reaching the outer margin, broken posteriorly by a spot of the ground-colour which reaches from the first median nervule to the middle of that interspace; the orange band is continued beyond the first median nervule to the middle of the submedian interspace by an obscure orange spot; the costa is narrowly orange for some distance on either side of the discal band; the outer margin is also very narrowly orange. *Hindwing* with the usual velvety rounded deep black sexual patch in the middle of the wing; a series of outer-discal most obscure pale spots between the veins; the outer margin narrowly orange. UNDERSIDE, *both wings* deep ochreous, spotted, streaked and mottled with black as in the Indian form of *D. celinde*, Stoll (*D. continentalis*, Staudinger). *Hindwing* with two small and obscure ocelli. FEMALE. Indistinguishable on both surfaces from the same sex of *D. continentalis* from North-east India.

This species is based on the male sex alone, and is the only species of the genus hitherto described with a broad discal orange band on the upperside of the forewing in that sex. In the *D. celinde* group the females possess a similar though broader band. The female of *D. deo* is quite indistinguishable from the same sex of *D. continentalis*. It is possible that *D. deo* is the dry-season form of the Upper Burmese race of the last-named species; but in the region where *D. deo* was obtained no collections have been made in the rainy season.

Described from one male taken in January and two females in March at Hsipaw, North Shan States, by Major F. B. Longe, R. E., to whom I am indebted for the gift of the specimens. In the collection of the late Captain E. Y. Watson are other examples from the same region.

Subfamily NYMPHALINÆ.

7. CETHOSIA NARMADOIDES, de Nicéville, pl. Y, fig. 11, ♂.

C. narmadoides, de Nicéville, Journ. A. S. B., vol. lxvi, pt. 2, p. 683, n. 85 (1898).HABITAT: Bali (*Doherty*).

EXPANSE: ♂, 2·9 and 3·2 inches.

DESCRIPTION: "MALE. UPPERSIDE, *both wings* differ from the same sex of *C. narmada*, Fruhstorfer, from Lombok, in having the outer-marginal black areas much narrower, thus leaving the discal and basal red areas much larger, these occupying the whole of the discoidal cell in the forewing instead of the posterior half only; and in the hindwing leaving quite free the outer-discal series of round black spots, instead of extending right up to and more or less including them. *Forewing* has the subapical oblique series of markings reddish-ochreous instead of whitish; they are conjoined, much larger and more numerous than in *C. narmada*, in the latter the anterior of the three subapical spots is widely separated from the two posterior ones. UNDERSIDE, *both wings* have the ground-colour much paler, in *C. narmada* it is heavily suffused with black, and the discal pale ochreous band is much broader in the present species. FEMALE unknown."

"The figure of *C. narmada* * does not agree with the specimens of that species in my collection received from and named by Mr. H. Fruhstorfer. Instead of having on the upperside of the forewing three subapical spots only, there is a nearly complete series as in *C. narmadoides*; and on the hindwing the outer-discal series of black spots is free of the marginal black band, thereby agreeing with *C. narmadoides*, instead of being absorbed in the band. It is described from two male specimens taken by Mr. W. Doherty in the low country of Bali in April, 1896. There are other specimens in Mr. H. J. Elwes' collection." (*de Nicéville*, l. c).

8. Note on *Neptis praslini*, Boisduval, and some species allied to it.

In the Journal of the Asiatic Society of Bengal, vol. lxvi, pt. 2, pp. 533—541 (1897), I published a short paper entitled "Description of *Neptis praslini*, Boisduval, and some species allied to it." Dr. A. G. Butler, of the British Museum (Natural History), has kindly examined proofs of three of the woodcuts therein published, and has given me

* *Cetosia* [sic!] *narmada*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xli, p. 380, pl. ix, fig. 2, male (1897).

notes on them, which prove that my identifications of some of the species were incorrect. No. 1, which I followed Dr. O. Staudinger in considering to be the true "*Limenitis*" *praslini* of Boisduval, described by the latter from New Ireland, and redescribed and figured by me from Northern Australia, is not that species, and requires a new name; and I propose *N. standingereana* for it, as it was figured by the learned doctor from Northern Australia. No. 2, *Neptis lactaria*, Butler, is correct, Dr. Butler noting that there are exactly similar specimens in the British Museum from N.-E. New Guinea. No. 3, *Neptis nausicaa*, de Nicéville, is the *Neptis papua* of Oberthür, and there are specimens in the British Museum from Dorey, New Guinea, says Dr. Butler, so my name falls as a synonym to Oberthür's. The latter author himself stated that he considered his *N. papua* had better sink to *N. praslini*, in which I followed him, but it seems to be quite distinct. No. 4, *Neptis nemeus*, de Nicéville, is typical *N. praslini*, Boisduval, so my name falls as a synonym, Dr. Butler noting that it is in the British Museum from New Ireland, my specimen being from New Britain.

9. RHINOPALPA CALLONICE, Fruhstorfer, pl. Y, fig. 12, ♂.

R. polynice, Kheil (*nec* Cramer), Rhop. Nias, p. 22, n. 41 (1884); *R. fulva*, idem (*nec* Felder), n. 42; *R. polynice callonice*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xlii, p. 330 (1898).

HABITAT: Nias Island, near Sumatra.

EXPANSE: ♂, 2·7 inches.

DESCRIPTION: MALE. Nearest to *R. elpinice*, Felder, * from Java, from which it differs on the UPPERSIDE of the *forewing* in the outer black border being narrow, only 6 mm. wide, where it crosses the submedian nervure, instead of 10 mm.; the black border is consequently outwardly oblique instead of almost upright. *Hindwing* also with the outer black border very much narrower, nearly half as wide, and of a much less intense black colour, thereby allowing the black ocelli of the underside to appear on the border as oval blind intensely black spots. UNDERSIDE, *both wings* have the ground-colour much paler, thereby allowing all the markings to appear more prominently; the rufous markings greatly obliterated, entirely so on the outer margins and tail; the violet markings also are obsolete.

Herr Napoleon Kheil records both *R. polynice*, Cramer, and *R. fulva*, Felder, from Nias; but these two names represent one species, which is

* *Eurhinia elpinice*, Felder, Reise Novara, I ep., vol. iii, p. 405, n. 606 (1867).

found in Assam, Burma, the Malay Peninsula, and Sumatra. "*Vanessa eudoxia*, Guérin, from the Malay Coast, is without doubt the female of *R. polynice*. A third synonym is the *R. polynice birmana* [*sic* !] of Fruhstorfer, l. c., p. 331, from Lower Burma (*Fruhstorfer*). *R. elpinice*, Felder, occurs in Java and Bali, *R. megalonice*, Felder, in Celebes, and *R. stratonice*, Felder, in most of the islands of the Philippine Archipelago.

Described from a single male received from Herr H. Fruhstorfer. The above description was written long before Herr Fruhstorfer's description of the species appeared, but may be allowed to stand. In a copy of his paper lately received from him he changes the name of the species in manuscript to "*callinice*."

10. CHARAXES KEIANUS, Rothschild, pl. Z, figs. 13, ♂; 14, ♀.

C. pyrrhus keianus, Rothschild, Nov. Zool., vol. iv, p. 508, n. 2 (1897); id., de Nicéville and Kähn, Journ. A. S. B., vol. lxvii, pt. 2, p. 262, n. 42 (1898).

HABITAT: Ké Isles.

EXPANSE: ♂, 3·8; ♀, 4·3 inches.

DESCRIPTION: MALE. UPPERSIDE, *forewing* differs from the same sex of *C. jupiter*, Butler,* from Port Moresby in New Guinea, Dory in New Guinea (the type), and Duke of York Island, in the discal pale yellow band being broader throughout; the quadrate spot in the second median interspace nearly twice as large, and placed much nearer the base of the interspace; with a considerable-sized spot anterior to the latter in the lower discoidal interspace, touching or almost touching the lower disco-cellular nervule, this spot in *C. jupiter* being reduced to a mere dot. *Hindwing* has (contrary to that of the forewing) the discal pale yellow band very considerably narrower, almost half as wide. UNDERSIDE, *both wings* with the same differences as above. FEMALE. Differs only from the male in being larger; *both wings* on the UPPERSIDE with the submarginal series of spots more prominent.

From the male of *C. attila*, Grose Smith,† from Guadalcanar, the same sex of *C. keianus* differs on the UPPERSIDE of the *forewing* in the discal band being of quite a different shape, and in the *hindwing* in the discal band being far narrower, produced posteriorly to a point; in *C. attila* it is of the same width throughout. Dr. A. G. Butler (Journ.

* *C. jupiter*, Butler, Lep. Ex., p. 14, n. 4, pl. v, figs. 4, 7, male (1869).

† *C. attila*, Grose Smith and Kirby, Rhop. Ex., pl. *Charaxes* v, figs. 1, 2, male (1891).

Linn. Soc. Lond., Zoology, vol. xxv, p. 387 (1896), reduces *C. attila* to the rank of a "var." of *C. jupiter*, but it is really more distinct from that species than is *C. keianus*. As these insular local races appear to be constant where each occurs, they are in my opinion worthy of full specific rank.

Described from three males and two females received from Herr Heinrich Kühn, after whom I had intended to name it had not Mr. Rothschild published his description first from specimens from Kai Toai and Great Kei.

Family LYCÆNIDÆ.

11. GERYDUS LONGEANA, n. sp., pl. Z, figs. 15, ♂ ; 16, ♀.

HABITAT: Upper Burma.

EXPANSE: ♂, 1·4 to 1·8 ; ♀, 1·2 to 1·6 inches.

DESCRIPTION: MALE. UPPERSIDE, *forewing* dull brown at the base, the outer half dull fuscous ; a curved discal whitish band divided into five parts by the dark veins, the anterior portions divided by the third median and lower discoidal nervules elongated, the two posterior portions placed behind the outer posterior end of the portion anterior to them small and nearly quadrate ; base of the third median nervule swollen and bare of scales. *Hindwing* rounded, varying in colour, sometimes entirely pale brown, with the costa broadly dull fuscous, sometimes the posterior two-thirds stone-colour. UNDERSIDE, *both wings* ochreous-brown, with the annular markings as in specimens of *G. boisduvali*, Moore, from Sikkim. *Forewing* with a broad curved discal white band, of equal width throughout, extending from the upper discoidal nervule to the inner margin, its inner and outer edges irregular. *Hindwing* with a transverse discal dark brown fascia ; the submarginal series of black dots not very conspicuous. FEMALE. UPPERSIDE, *both wings* creamy-white. *Forewing* with the apex broadly, the outer margin decreasingly, dull fuscous, sometimes with a small black patch in the middle of the wing placed on the bases of the first and second median nervules. *Hindwing* slightly angled at the termination of the third median nervule, with the costa broadly pale fuscous ; this fuscous area is larger in those specimens with the discal black patch in the forewing than in those without it. UNDERSIDE, *both wings* very similar to those of the male, but the ground-colour is more ochreous and much paler.

Apparently nearest to *G. boisduvali*, differing therefrom in the male in the upperside of both wings being of two shades, dull brown and black instead of ferruginous throughout, and in the discal markings of the forewing being much larger, whitish, and altogether more conspicuous. The female differs from the same sex of *G. boisduvali* in having both wings on the upperside mostly creamy-white instead of ferruginous. The only described species from the Malay Peninsula and India I have not seen are *G. heracleion*, Doherty, from Perak, which has in the male on the upperside of the forewing a "slaty [bluish] gloss" as in *G. symethus*, Cramer; the markings also differ in detail; and *G. irroratus*, Druce, [recte *G. boisduvali*, Moore, as *G. irroratus* is a synonym of *G. boisduvali*], var. *assamensis*, Doherty, from the Dhansiri Valley, Naga Hills, but that species has only a very small longitudinal pale area around the base of the third median nervule on the upperside of the forewing.

Taken commonly at Hsipaw, in the Northern Shan States, Upper Burma, from December to February, by Major F. B. Longe, R.E., after whom I have much pleasure in naming it.

I may note here that my remark in "The Butterflies of India, Burmah and Ceylon," vol. iii, p. 22 (1890), that in the genus *Gerydus* "The males have no secondary sexual characters" is partially incorrect. In my collection the following species in the male have the base of the third median nervule of the forewing swollen and bare of scales:—*Gerydus symethus*, Cramer (= *G. pandu*, Horsfield), *G. leos*, Guérin (= *G. boisduvalii*, Butler, nec *G. boisduvali*, Moore, and *G. teos*, Doherty), *G. maximus*, Holland, *G. zinckenii*, Felder, *G. gopara*, de Nicéville (probably equals *G. biggsii*, Distant), *G. gigantes*, de Nicéville, *G. ancon*, Doherty, *G. boisduvali*, Moore (= *G. irroratus*, Druce), *G. chinensis*, Felder, *G. philippus*, Staudinger, *G. ceramensis*, Ribbe (= *G. acragas*, Doherty), *G. melanion*, Felder, and *G. longeana*, de Nicéville. The following species, which I have not seen, are said by their describers to have the same male secondary sexual character:—*Gerydus irroratus*, var. *assamensis*, Doherty, *G. gigas*, H. H. Druce, *G. vincula*, H. H. Druce, *G. improbus*, H. H. Druce, and *G. heracleion*, Doherty. The following species in my collection have the base of the third median nervule of the forewing simple (not swollen) and covered with scales:—*Gerydus croton*, Doherty, *G. gæsa*, de Nicéville, and *G. innocens*, H. H. Druce. The absence or presence of male secondary sexual characters in the following species

is unknown to the writer—(a) owing to females only having been described: *Gerydus petronius*, Distant, *G. gallus*, de Nicéville, *G. gætulus*, de Nicéville—(b) owing to no mention by the describers of any male sexual characters: *Gerydus biggsii*, Distant, *G. drucei*, Semper, *G. learchus*, Felder, *G. stygianus*, Butler, and (?) *G. plautus*, Fabricius.

12. *LOGANIA WATSONIANA*, n. sp., pl. Z, figs. 17, ♂ ; 18, ♀.

HABITAT: Upper Burma.

EXPANSE: ♂, 1.1 to 1.4 ; ♀, 1.1 to 1.3 inches.

DESCRIPTION: MALE. UPPERSIDE, *forewing* with the basal two-thirds greyish-blue, the apex and outer margin broadly black; an oval outwardly-oblique discal white patch just beyond the discoidal cell, crossed by the third median nervule, which, as in some species of *Gerydus*, is swollen at the base (though not quite to the same extent) and bare of scales. *Hindwing* with the costa as far as the subcostal nervure and second subcostal nervule black, the rest of the wing greyish-blue. UNDERSIDE, *forewing* dull fuscous, the apex mottled with ferruginous, the outer margin broadly black; a broad discal curved white fascia, of about equal width throughout, commencing about the subcostal nervure and ending on the inner margin. *Hindwing* fuscous, profusely irrorated with ferruginous. FEMALE. UPPERSIDE, *forewing* differs from the male in having the discal white patch less prominent, and merged into the greyish-blue basal area. Otherwise much as in the male.

This species is the only *Logania* known to me which has a broad discal curved white fascia on the underside of the forewing in both sexes. *L. sriwa*, Distant, and *L. malayica*, Distant, are the only two species in my collection which have the base of the third median nervule in the male not swollen.

Described from six pairs in Major F. B. Longe's and my own collection, taken at Hsipaw in the Northern Shan States, roughly between Lat. 22° and 23° and Long. 97°. I have named this species after the late Captain E. Y. Watson, from whom I first received it, who had made a speciality of the butterflies of Burma.

13. *CYANIRIS CARA*, n. sp., pl. Z, figs. 19, ♂ ; 20, ♀.

HABITAT: South Celebes.

EXPANSE: ♂, 1.0 to 1.1 ; ♀, 1.0 to 1.2 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* dark plumbeous-purple, exactly the same shade as in typical species of the genus *Nacaduba*. *Fore-*

wing with an anteciliary black thread. *Hindwing* with two submarginal subanal black dots between the veins, and a marginal black thread. *Cilia* of the forewing anteriorly black, posteriorly and of the hindwing white, at the terminations of the veins black. UNDERSIDE, *both wings* pale French-grey, with all the markings of a slightly darker grey than the ground-colour, and outwardly defined with a narrow white line. *Forewing* with a large quadrate spot at the end of the discoidal cell; a discal series of five rounded conjoined spots, the anteriormost spot nearer the base of the wing than the others; a submarginal lunular band, and a marginal series of linear spots between the veins. *Hindwing* with the base metallic-greenish; the usual spots across the base, a large one at the end of the cell, a highly irregular discal series, the marginal markings as in the forewing, except that the submarginal lunular band is more deeply indented and is a little further removed from the margin. *Cilia* of both wings French-grey, in the hindwing bearing a black dot at the end of each vein. FEMALE. UPPERSIDE, *both wings* shining bluish-purple, but of a much lighter shade than in the male. *Forewing* with the costa, apex and outer margin broadly black; a prominent wedge-shaped black spot at the end of the discoidal cell, beyond which the ground-colour is just touched with white. *Hindwing* with a narrow black disco-cellular streak; six marginal oval black spots between the veins, outwardly defined with pale blue; a prominent anteciliary black thread. UNDERSIDE, *both wings* marked as in the male.

Apparently nearest to *C. musina*, Snellen,* from Perak, Sumatra, Java and Lombok, from the male of which (the female I have not seen) it differs on the upperside of both wings in being of a still deeper plumbeous colour, and on the underside in having none of the spots black, and the discal series on the forewing forming a continuous chain instead of the spots being placed in echelon. The markings on the underside of *C. cara* are highly peculiar, and are unlike those of any species of *Cyaniris* known to me, in that they are all uniform in colour, pale French-grey, none being black. They are wonderfully like those in *Nacaduba nelides*, mihi, from N.-E. Sumatra and W. Java, *vide* l. c., p. 280, n. 16, pl. O, fig. 24, *male*. It is also near to *C. lugra*, H. H. Druce,† from

* *Vide* de Nicéville, Journ. Bomb. Nat. Hist. Soc., vol. ix, p. 275, n. 12, pl. O, fig. 19, *male* (1895).

† Proc. Zool. Soc. Lond., 1895, p. 573, pl. xxxii, fig. 5, *male*.

Kina Balu, Borneo; but the coloration of the upperside is different, that species being "dull greyish silvery blue," and the hindwing on the underside in that species has some *blackish* spots. Mr. Henley Grose Smith has described a *Cyaniris lyce* * from South Celebes, but the description is very short, and no characteristic points are brought forward, so without a figure the description is useless for recognition.

Described from two pairs captured by Herr H. Fruhstorfer at Bua-Kraeng, in South Celebes, at an elevation of 5,000 feet, in February, 1896, and kindly given to me by that gentleman.

14. LAMPIDES LUNATA, n. sp., pl. Z, figs. 21, ♂ ; 22, ♀.

HABITAT : Toli Toli, North Celebes.

EXPANSE : ♂, ♀, 1·2 inches.

DESCRIPTION : MALE. UPPERSIDE, *both wings* pale milky bluish-white, with a slight gloss only ; *cilia* black tipped with white. *Forewing* with a rather broad submarginal, and an equally broad marginal, fuscous band, which are separated from one another by a narrow band of the ground-colour. *Hindwing* with a submarginal series of prominent fuscous lunules placed between the veins, beyond which is a series of oval fuscous spots increasing in size from the apex of the wing to the anal angle, each spot surrounded by a fine line of the ground-colour ; a fine antemarginal black thread ; *tail* black, tipped with white. UNDERSIDE, *both wings* pale brown ; with a fine antemarginal black thread. *Forewing* with two pairs of white dots on the costa ; the first and second fine white lines on the disc counting from the base forming a Y, the third line continuous from near the costa to the submedian nervure, the fourth line also continuous from near the costa to the second median nervule ; two submarginal waved white lines, enclosing a series of prominent black spots, with a marginal series of oval black spots between the outer of the two submarginal white lines and a fine marginal white thread. *Hindwing* with the usual basal and discal fine white lines ; a highly irregular submarginal white line ; beyond which is a series of large black spots, the second from the costa the largest of all ; a marginal series of oval black spots, surrounded by a fine white line, the black spot in the first median interspace the largest of all,

* Nov. Zoo., vol. ii, p. 506 (1895)

at its two lower corners bearing metallic silvery-blue scales, and crowned with a fine orange line; with another fine orange line at the anal angle, outwardly marked with a few blue scales. FEMALE, UPPERSIDE, *both wings* fuliginous. *Forewing* with a large discal bluish-white patch. *Hindwing* with the base slightly bluish-white; the marginal markings much as in the male, except that the inner series of black lunules are inwardly defined by a fine white line. UNDERSIDE, *both wings* as in the male.

Apparently nearest to "*Plebeius*" *snelleni*, Röber, Iris, vol. i, p. 54, pl. iv, fig. 9, *male* (1888), from Bonthain in South Celebes and Tomboegoe in East Celebes, from which the male differs in having a submarginal fuscous band on the upperside of the forewing; and both sexes differ in the disposition of the white bands on the underside of the forewing; in *Lampides snelleni* the inner pair of lines are parallel to one another, and both are continued to the submedian nervure not forming a Y, while the outer pair of lines form a Y, instead of the third line reaching the submedian nervure, and the fourth line the second median nervure. The markings of the underside of *L. lunata* agree better with those of *L. snelleni*, var. *batjanensis*, Röber, l. c., pl. iv, fig. 10, *female*, from Batjan; but the female of the present species has the white areas on the upperside of both wings very much smaller.

Described from three males and two females kindly sent to me by Herr H. Fruhstorfer.

15. *LYCÆNESTHES TURNERI*, Miskin, pl. Z, figs. 23, ♂; 24, ♀.

L. turneri, Miskin, Proc. Linn. Soc. New South Wales, second series, vol. v, p. 39 (1891); id., de Nieville, Journ. A. S. B., vol. lxvii, pt. 2, p. 267, in 59 (1898).

HABITAT: Ké Isles; Northern Australia.

EXPANSE: ♂, 1.5; ♀, 1.4 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* shining plumbeous-purple, with a fine anteciliary black thread. *Hindwing* with the costa and abdominal margin broadly pale fuscous. UNDERSIDE, *both wings* pale French-grey or stone-colour, with bands and spots barely if at all darker than the ground-colour, but defined by outer fine white lines. *Forewing* with the disco-cellular nervules defined by a white line, with a similar line on either side of it; a rather broad regularly curved discal unbroken band from the costa to the submedian nervure, widest on the

costa, gradually tapering posteriorly ; two submarginal lunular lines. *Hindwing* crossed by three highly irregular bands ; two submarginal lines more deeply lunular than in the forewing ; the usual round black spot in the first median interspace crowned narrowly with dark orange ; a fine black anteciliary thread, defined with an equally fine white line on either side. FEMALE. UPPERSIDE, *both wings* pale dull fuscous. *Forewing* with the discoidal cell and the basal half of the wing posterior to the cell dull blue ; an oval discal white patch, inwardly bounded by the disco-cellular nervules, anteriorly by the lower discoidal nervule, posteriorly almost reaching the submedian nervure. *Hindwing* with streaks of dull blue between the veins not nearly reaching the margin, the outer end of each blue streak excavated and whitish ; the margin bears a highly lunular pale blue line, enclosing outwardly a series of spots of the ground-colour, except the one in the first median interspace, which is deep black ; a fine anteciliary black thread, defined on both sides by an equally fine white thread ; the *cilia* developed into three short tooth-like tails from the terminations of the median nervules. UNDERSIDE, *forewing* with the white patch smaller than above, the discal band more prominent than in the male. Otherwise as in the male.

The male of this species is very similar to that sex of *L. emolus*, Godart, from the Ké Isles, differing, however, in its larger size, distinctly narrower (less broad) hindwing, with no submarginal black spots on the upperside ; in *L. emolus* from Ké there are three or four. On the underside of the forewing the discal band is continuous, evenly curved and evenly tapering, in *L. emolus* it is very irregular, of the same width throughout, its two lowest portions placed in echelon. The female is, as far as I am aware, unique in the genus, being the only one with a large white patch in the middle of the forewing.

Described and figured from a male and two females received from Herr Heinrich Kühn from the Ké Isles. I have also received a pair of specimens from Mr. Rowland E. Turner from Mackay in Northern Australia, with which the examples described above entirely agree. *L. turneri* was originally described from Cape York, Cardwell and Mackay, all in tropical North Australia. Mr. W. H. Miskin described the female only, but called it the male. The description of the male of *L. tasmanicus*, Miskin (l.c., p. 40) agrees fairly well with the male

of *L. turneri*, except that on the underside of both wings the transverse bands are not "dark reddish-brown," nor are the bases of the wings "dark brown." In 1891 Mr. Miskin says he received it from Cairns in Northern Australia, and doubted the recorded habitat of his type specimen, which is said to have come from Tasmania.

16. CAMENA CAMERIA, n. sp., pl. Z, fig. 26, ♂.

HABITAT: South Celebes.

EXPANSE: ♂, 1.6 inches.

DESCRIPTION: MALE. Very near to *C. carmentalis*, de Nicéville, from the Khasi Hills, the Shan States in Upper Burma, and Nias,* but considerably larger. UPPERSIDE, *forewing* has the blue coloration less extensive, not reaching so near to the outer margin, of a lighter shade of blue, and highly iridescent, in some lights being almost invisible, which it never is in *C. carmentalis*. *Hindwing* with the black sexual basal patch as in that species, the blue patch beyond it of the same shade as in the *forewing*, but not so iridescent and more restricted to the base of the wing. UNDERSIDE, *both wings* of a paler, more silvery, shade than in *C. carmentalis*, an indistinct submarginal fascia, the disco-cellular nervules defined by a fine dark line; the discal line much more prominent and further from the outer margin, on the *hindwing* outwardly defined by a white fascia. The sexual tuft of hairs on the underside of the *forewing* the same as in *C. carmentalis*.

Described from a single specimen kindly given to me by Herr H. Fruhstorfer, taken by him in February, 1896, at Bua-Kraeng in South Celebes at 5,000 feet elevation.

17. DEUDORIX GÆTULIA, de Nicéville, pl. AA, fig. 27, ♀.

D. gætulin, de Nicéville, Journ. Bomb. Nat. Hist. Soc., vol. vii, p. 333, n. 15, pl. II, fig. 13, *male* (1892).

HABITAT: Khasi Hills; Burma.

EXPANSE: ♀, 1.8 inches.

DESCRIPTION: FEMALE. UPPERSIDE, *both wings* glossy pale hair-brown, becoming darker towards the margins. *Forewing* unmarked. *Hindwing* with a large anal white patch divided by the dark veins from the third median nervule to the submedian nervure, the portion in the second median interspace small, the one in the first median interspace the largest, the one in the submedian interspace also large; a promi-

* Journ. Bombay Nat. Hist. Soc., vol. vii, p. 335, n. 12, pl. II, fig. 10, *male* (1892).

nent anteciliary black line, which becomes lost in the ground-colour of the wing after it has passed the anal white patch; anal lobe black in the middle, outwardly defined with white. *Tail* twice as long as in the male, white, with a narrow black centre. *Cilia* of the hindwing white, very long on the abdominal margin, becoming hair-brown towards the apex of the wing; of the forewing hair-brown. **UNDERSIDE**, *both wings* dull silvery-grey. *Forewing* with the costa narrowly, the apex somewhat broadly, the outer margin decreasingly, pale cupreous. *Hindwing* with an outer-discal series of black spots outwardly defined with white, the three anterior ones small, round, slightly increasing in size, the one in the submedian interspace crescentic, with a minute dot placed against it in the internal interspace, with another dot anterior to it on the abdominal margin; an oval black spot near the margin in the first median interspace; the submedian interspace near the margin sprinkled with black scales; the anal lobe black; a prominent anteciliary black thread from the anal lobe to the discoidal nervule, also extending along the abdominal margin for a short distance anterior to the anal lobe.

The specimen described is in the collection of Major F. B. Longe, R.E., who captured it on the 8th January, 1887, at Ngokgale, near Hsipaw, North Shan States, Upper Burma. Males appear to be fairly common in the Khasi Hills of Assam, and vary in size from 1.5 to 1.9 inches in expanse; they are also very variable in the extent of the markings on the underside, many of those described by me in the type being frequently obliterated. I may note here that the *Deudorix calderon*, Kheil, Rhop. Nias, p. 33, m. 116, pl. iv, fig. 25, *male* (1884), appears to be closely allied to *D. gaetulia* and to "*Rapala*" *hypargyria*, Elwes, Proc. Zool. Soc. Lond., 1892, p. 643, pl. xliii, fig. 7, *male*, from the Karen Hills in Burma; but I have seen no specimens of *D. calderon* from Nias, though the same species appears to occur in Java, a male from thence in Mr. Fruhstorfer's collection having been sent to me for identification. The three species above named are all very closely allied.

18. *ZINASPA ZANA*, n. sp., pl. AA, fig. 28, ♀.

HABITAT: Western China.

EXPANSE: ♀, 1.3 and 1.5 inches.

DESCRIPTION: FEMALE. **UPPERSIDE**, *both wings* pale brown, with a slight vinous gloss; *cilia* cinereous. *Forewing* with a small basal purple area reaching from the subcostal to the submedian nervure,

occupying the whole of the discoidal cell. *Hindwing* unmarked ; *tail* very short, reduced to a mere tooth. **UNDERSIDE**, *both wings* dark grey, with slightly darker markings outwardly defined with white. *Forewing* with a very irregular discal fascia, and an indistinct marginal fascia. *Hindwing* with a highly irregular discal fascia, and some very indistinct marginal markings ; a small round black spot in the first median interspace well removed from the margin, faintly surrounded with ferruginous ; anal lobe bearing a small black spot.

Mr. J. H. Leech in Butt. China, vol. ii, p. 346 (1893), records this species as *Z. distorta*, de Nicéville, from Ni-ton and Huang-mu-chang in Western China, with these remarks :—" My collectors found this species rather common. They differ from the Sikkim type in Möller's collection in being smaller, and in having the purple colour of the upperside darker in tone, while the underside is grey instead of ferruginous." My specimens differ from the same sex of *Z. distorta* from Sikkim, the North Shan States and Sumatra in having the purple colour of the upperside of the forewing less than half as extensive, and entirely wanting on the hindwing ; the tail a quarter as long ; and the ground-colour of the underside of both wings dark grey instead of dull ferruginous or cinnamon-coloured, with no vinous gloss ; and on the hindwing there is no basal line.

Described from two specimens from Western China kindly sent to me by M. C. Oberthür. I have not seen the male.

19. *HYPOTHECLA HONOS*, n. sp., pl. Z, fig. 25, ♀.

HABITAT: North Celebes.

EXPANSE: ♂, 1·65 ; ♀, 1·65 to 1·80 inches.

DESCRIPTION: **MALE**. **UPPERSIDE**, *both wings* dull black, obscurely glossed with purple. *Forewing* with the purple coloration confined to the discal area. *Hindwing* with the veins black ; a marginal series of black spots between the veins inwardly defined by a whitish-violet line, each spot produced inwardly to a point ; a fine anteciliary white and then an equally fine black line. *Cilia* long and white, bearing in the middle a very fine black line. (Looked at under a magnifying glass the margin appears to bear five lines—three white and two black.) *Tail* from the termination of the first median nervule about 6 mm. in length, fine, black, ciliated and tipped with white. **UNDERSIDE**, *both wings* pale brown, the markings mostly darker brown, outwardly defined with

whitish. *Forewing* with a quadrate marking at the end of the discoidal cell; a catenulated discal band consisting of eight portions, broken in the middle, the posterior moiety shifted inwardly towards the base of the wing; a submarginal lunulated band; a marginal series of oval spots between the veins; a very fine anteciliary black thread. *Hindwing* with three prominent rounded deep black spots arranged across the base, a large one just behind the middle of the costal nervure, a smaller one in the middle of the cell, a still smaller one in the middle of the abdominal margin; an elongated marking at the end of the cell; a much broken discal band, the anterior portion consisting of two spots, the middle portion also of two spots, but shifted outwardly, the lower portion of four spots, which are recurved to the abdominal margin; a submarginal lunulated band; a marginal series of oval spots between the veins, the one in the first median interspace larger than the others and crowned with orange, outwardly bearing a clump of metallic turquoise-blue scales; a fine anteciliary black thread. *Cilia* of both wings white bisected by a black line. FEMALE. UPPERSIDE, *both wings* dull black with no purple gloss. *Forewing* with an elongated discal whitish area in the second median interspace, which in some lights appears of a rich blue iridescent colour. *Hindwing* as in the male. UNDERSIDE, *both wings* with the ground-colour whitish, paler than in the male, the markings very similar.

The only other species known in this genus (which is an excellent one, with only two subcostal nervules to the forewing in both sexes, no secondary male sexual characters, and allied to *Thecla*, as Herr Georg Semper points out), is *Hypotheca astyla*, Felder, from the Philippine Islands, from which *H. honos* differs in the much duller coloration of both wings of both sexes on the upperside, that species having the purple coloration much more developed, and specially in the markings of the underside, in *H. astyla* the discal band in both wings is continuous and unbroken, in *H. honos* it is once fractured in the forewing and twice in the hindwing; also the submarginal band in *H. astyla* is straight with even edges, in *H. honos* it is highly lunulated.

Described from one male and five females kindly sent to me by the capturer, Herr H. Fruhstorfer, from Toli Toli, North Celebes, November-December, 1895. All are in poor condition as regards the upper-side, but the markings of the underside are in every specimen perfectly

clear and distinct. It appears to be a very delicate insect, and easily becomes abraded on the upper surface.

Family PAPILIONIDÆ.

Subfamily PIERINÆ.

20. *IXIAS PYRENE*, Linnaeus, pl. AA, figs. 29, 30, *gynandromorphous example*.

Papilio pyrene, Linnaeus, Mus. Lud. Utr., p. 241, n. 60 (1764).

The gynandromorphous specimen here figured has been kindly lent to me by Mr. Paul Möwis, by whose native collectors it was obtained in Sikkim. It is not of the usual bilateral form, but the markings of the wings are more or less commingled. Each wing may be thus described:—The forewing on the left-hand side is mostly feminine, and is larger than that on the right-hand side; on its upperside it is normally marked, except that there is a short male orange streak at about the middle of the costa on either side of the base of the first subcostal nervule, but more anterior than posterior to that vein; on the underside this wing is wholly feminine, except a narrow streak of the male yellow coloration along the basal two-thirds of the costa. The hindwing on the left-hand side is mostly masculine, wholly so on the upperside, and is smaller than the opposite wing; on the underside, however, the usual uniform male yellow coloration is broken by a wide discal streak of the sexual feminine white coloration, which commences narrowly at the base of the wing, occupies the posterior half of the discoidal cell, and ends widely near the outer margin. The forewing on the right-hand side is mostly masculine, but the basal anterior quarter of the wing has the normal feminine powdery-black coloration, and there are feminine white streaks invading the masculine orange area; on the underside the coloration is about two-thirds masculine and one-third feminine, there being a very broad band of feminine (white) coloration extending completely across the wing from the base to the outer margin on the anterior half of the wing. The hindwing on the right-hand side is mostly feminine, on the upperside it bears a male narrow discal yellow streak, commencing at the base of the wing in the discoidal cell, broken before the end of the cell, reappearing again in the discoidal interspace for a short distance at its middle, and placed against that vein; on the underside the anterior third of the wing has the ground-colour masculine (yellow), while the posterior two-thirds has it feminine (white).

This curiously commingled gynandromorphous specimen is the first I have seen from Asia. Bilateral monsters seem to occur more frequently, and I recently described such a one in the Journ. A. S. B., vol. lxvi, pt. 2, p. 552, n. 8 (1897), also from Sikkim. Dr. Adolf Fritze in Zool. Jahr., vol. xi, p. 256, pl. xvi, figs. 5a, 5b (1898), has recently described a very remarkable commingled gynandromorphous example of the summer generation of *Hebomoia glaucippe*, Linnaeus, from Okinawa in the Liu-Kiu Islands south of Japan.

Genus AOA, nov.

MALE. Agrees with the genera *Ulaiana*, Distant, the type of which is the "*Pieris*" *cynis* of Hewitson, and *Lade*, gen. nov., de Nicéville, the type of which is the "*Appias*" *lalassis* of Grose Smith = "*Pieris*" *indroides* of Honrath, in the abdomen lacking the tuft of long and stiff hairs on each side of the anal valves at their base beneath present in the genus *Appias*, Hübner, of which the genera *Catophaga*, Hübner, *Hiposcritia*, Geyer, *Trigonia*, Geyer, and *Tachyris*, Wallace, are, in my opinion, synonyms. FOREWING, differs from *Ulaiana* in the *costa* being straighter, the *outer margin* being straight instead of convex; the *third subcostal nervule* longer; the *upper discoidal nervule* longer, arising from the subcostal nervure nearer the apex of the discoidal cell; *discoidal cell* longer; *disco-cellular nervules* upright instead of being strongly outwardly oblique. HINDWING, *costal nervure* much shorter. FOREWING, differs from *Lade* in being broader, the *apex* rounded instead of falcate; *third subcostal nervule* three times as long. HINDWING, *costa* convex instead of straight. Nearest to *Huphina*, Moore, differing entirely in facies. FOREWING, disco-cellular nervules upright instead of outwardly oblique. *Antennae* in proportion much longer and stouter. *Palpi* longer, especially the third joint. Type, "*Pieris*" *affinis*, Vollenhoven.

(1) AOA AFFINIS, Vollenhoven.

Pieris affinis, Vollenhoven, Fauna Ent. l'Arch. Indo-Néer., Fiérides, p. 40, n. 53, pl. v, fig. 2, *male* (1865); id., Wallace, Trans. Ent. Soc. Lond., third series, vol. iv, p. 331, n. 6 (1867); id., Hopffer, Stet. Ent. Zeit., vol. xxxv, p. 23, n. 35 (1874); *Belenois affinis*, Butler, Proc. Zool. Soc. Lond., 1872, p. 57, n. 41; *Huphina affinis*, Rothschild, Iris, vol. v, p. 439 (1892).

HABITAT: Celebes.

Dr. A. R. Wallace wrote of this species: "This insect bears such a curious resemblance to the female of *Pieris ithome*,

Felder,* that it has always been considered to be the female of a closely-allied species. Owing to its having very small and smooth anal valves I had always considered it to be of that sex; but having heard that Mr. Watson has found plumules [androconia] on the wing, and therefore pronounced it to be a male, I relaxed my specimens, and by opening the valves found that he was right, and that all the specimens in my own and other collections are males. This being the case, it is evident that it has no close *affinity* whatever with *P. ithome*, or with any other known butterfly, so that its name will be a good example of '*lucus a non lucendo*,' and will serve to recall the error to which its *analogical* resemblance to the female of *P. ithome* gave rise. It must now come in the group of true *Pieris*, and is nearest to *P. rachel*, Boisduval, though forming a distinct subsection." From the synonymy above it will be seen that the type species has been placed in three genera. Wallace correctly located it in *Pieris* group *b*, which equals *Huphina* of Moore, the latter was differentiated many years after Wallace wrote. Rothschild's location is very nearly correct, the present genus being very near to *Huphina*. I have only seen males of this species.

(2) AOA ABNORMIS, Wallace.

Tachyris abnormis, Wallace, Trans. Ent. Soc. Lond., third series, vol. iv, p. 368, n. 14, pl. viii, fig. 5, *female* (1867); *Appias abnormis*, Butler, Proc. Zool. Soc. Lond., 1872, p. 48, n. 46; *Delias* (*Tachyris* on plate) *abnormis*, Grose Smith and Kirby, Rhop. Ex., pl. *Pierinae* ii, figs. 6, 7, *female* (*nec* male) (1889); *Pieris abnormis*, Hagen, Jahr. des Nass. Ver. für Natur., vol. 1, p. 60, n. 34 (1897).

HABITAT: New Guinea.

Messrs. Grose Smith and Kirby in redescribing and figuring this species say that the specimen figured is a male; but the figure and description do not agree with a male in my collection from Humboldt Bay, North-West New Guinea, which differs in having the black borders to both wings on the upperside very much narrower, in the forewing fining away to nothing before reaching the anal angle, and in the hindwing being almost reduced to spots between the veins. In their figure also they show and describe two red spots on the underside of the hindwing, which are absent in my specimen. Under *Tachyris euryxantha*, Honrath (*Delias* on plate), plate *Delias* vi, figs. 7, 8, *female* (1896), Messrs.

* From Celebes, placed by Wallace in the same paper (p. 380, n. 47) in the genus *Tachyris*.

Grose Smith and Kirby note : " The German authors regard this species as either a local or seasonal form of *Delias abnormis*, Wallace (see our figure *Tachyris abnormis*, anteà, vol. i, *Pierinæ* pl. ii, figs. 6 and 7 ; *Delias abnormis* in text, which represents a female and not a male). It may, however, be at once distinguished by the colouring of the under surface. Herr von Mitis points out (*Iris*, vol. vi, p. 114) that the four-branched [two-branched—L. de N.] subcostal nervure removes both *abnormis* and *euryxantha* from *Delias*." There is no doubt whatever that all the species of the genus *Ala* are mimics of species of the genus *Delias*, their structure being entirely different from that of *Delias*, as they possess an additional subcostal nervule to the forewing. When Dr. A. R. Wallace described *Tachyris abnormis* he knew only the female ; had he known the male he would certainly have put the species in the genus *Pieris*, group *b*.

(3) AOA EURYXANTHA, Honrath.

Delias abnormis, var. *euryxantha*, Honrath, Berl. Ent. Zeitsch., vol. xxxvi, p. 435 (1891) ; id., Standinger, *Iris*, vol. vii, p. 117 (1894) ; *Pieris euriwantha* [sic !], Oberthür *Etudes d'Ent.*, vol. xix, p. 6, pl. ii, figs. 9, *male* ; 7, *female* (1894) ; *P. abnormis*, var. *euryxantha*, Hagen, *Jahr. des Nass. Ver. für Natur.*, vol. l, p. 60, n. 35 (1897) ; *Tachyris* (*Delias* on plate) *euryxantha*, Grose Smith and Kirby, *Rhop. Ex.*, pl. *Delias* vi, figs. 7, 8, *female* (1893).

HABITAT : New Guinea.

In my separata of Honrath's paper that gentleman changed in MS. the generic name of this species from *Delias* to *Appias*. I possess a single female of this species from Stephansort, German New Guinea, which agrees with the published figures. Von Mitis remarks on this species in *Iris*, vol. vi, p. 114 (1893).

(4) AOA DOHERTYI, Oberthür.

Pieris dohertyi, Oberthür, *Etudes d'Ent.*, vol. xix, p. 6, pl. ii, fig. 2, *male* (1894) ; ? *Pieris dohertyana* [sic !], Grose Smith [sic], Hagen, *Jahr. des Nass. Ver. für Natur.*, vol. l, p. 61, n. 36 (1897).

HABITAT : Ansus in the island of Jobi, Geelwink Bay, North-West New Guinea.

I have not seen this species.

(5) AOA DISCUS, Honrath.

Delias discus, Honrath, Berl. Ent. Zeitsch., vol. xxx, p. 130, pl. v, fig. 4, *female* (1886).

HABITAT : Sekar, Western New Guinea.

Not seen by me.

(6) AOA QUADRICOLOR, Salvin and Godman.

Pieris quadricolor, Salvin and Godman, Proc. Zool. Soc. Lond., 1877, p. 147, n. 29 pl. xxiii, figs. 3, 4, male; *Pieris (Belenois) quadricolor*, Pagenstecher, Jahr. des Nass. ver. für Natur., vol. xlvii, p. 71, n. 8 (1894).

HABITAT : Duke of York Island (*Godman and Salvin*) ; Mioko, New Guinea (*Pagenstecher*).

I have not seen this species.

(7) AOA DISCOLOR, Mathew.

Pieris discolor, Mathew, Trans. Ent. Soc. Lond., 1887, p. 47.

HABITAT : Ugi, Solomon Islands.

Unknown to me.

Subfamily PAPILIONINÆ.

21. PAPILIO (*Pangerana*) NYX, de Nicéville, pl. AA, fig. 31, ♀.

P. (Pangerana) nyx, de Nicéville, Ann. and Mag. of Nat. Hist., sixth series, vol. xx, p. 225 (1897).

HABITAT : Bali.

Having recently described this species, I take the opportunity of figuring it here.

Family HESPERIIDÆ.

22. LOTONGUS ONARA, Butler, pl. AA, fig. 32, ♂.

Hesperia onara, Butler, Trans. Ent. Soc. Lond., 1870, p. 498, n. 1 ; idem, id., Lep. Ex., p. 166, n. 1, pl. lix, fig. 11, ? female (1874) ; id., Plötz, Stet. Ent. Zeit., vol. xliii, p. 339, n. 120 (1882).

HABITAT : Java.

EXPANSE : ♂, 1·8 inches.

DESCRIPTION : MALE. UPPERSIDE, both wings dark hair-brown. Forewing with the following translucent pale yellow spots :—two in the discoidal cell, the anterior one small and rounded, the posterior one placed directly in the middle behind the anterior spot three times as large and elongated ; a minute dot in the subcostal interspace ; a small oval spot towards the base of the second median interspace ; a much larger oval one towards the middle of the first median interspace. Hindwing with a large basal and anal luteous area occupying about half the surface of the wing, bearing at the extreme base of the wing a large patch of dark brown setæ. UNDERSIDE, forewing dark brown, but the outer and inner margins broadly perceptibly paler ; the translucent spots as on the upperside ; a costal luteous patch immediately anterior to the spots in the cell ; the inner margin as far as the submedian nervure luteous. Hindwing dark brown, crossed at the middle

by a broad even-edged luteous band, which greatly widens out posteriorly. *Cilia* of the forewing dark brown; of the hindwing anteriorly dark brown, posteriorly luteous. *Antennæ* dark brown, but the base of the club above whitish. *Palpi*, *head*, *thorax* and *abdomen* dark brown, the apex of the latter luteous.

Dr. A. G. Butler has kindly examined the drawing here reproduced, and considers it to represent the hitherto undescribed male of his *Hesperia onara*, the type of which is not in the British Museum, but is in Dr. Butler's opinion probably a female. When describing it he did not state the sex of his type example. He gives the habitat as "East Indies?" The late Herr Plötz recorded both sexes from "India." The male differs from the figure of the female in having five instead of three translucent spots on the forewing, and the basal patch of dark brown setæ on the upperside of the hindwing is more prominent. From the same sex of "*Proteides*" *excellens*, Staudinger,* from Palawan in the Philippines, N.-E. Sumatra, and Pulo Laut, it differs in the luteous area on the hindwing on both surfaces being much larger, and the spots on the forewing being smaller.

Described from a single example kindly sent to me by Herr H. Fruhstorfer, who captured it on Mount Gede in Western Java at an elevation of 4,000 feet in August, 1892.

23. *ZEA MYTHECOIDES*, n. sp., pl. AA, figs. 33, ♂; 34, ♀.

HABITAT: Bantimoeroeng, South Celebes.

EXPANSE: ♂, 2.0 to 2.1; ♀, 2.2 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* shining hair-brown. *Cilia* cinereous. *Forewing* with the following translucent white spots:—a narrow transverse one towards the end of the discoidal cell; two or three round subapical dots placed outwardly obliquely; a narrow outwardly-oblique spot towards the base of the second median interspace; a similar one across the middle of the first median interspace. *Hindwing* immaculate. UNDERSIDE, *both wings* dull hair-brown. *Forewing* with the translucent spots as on the upperside; an inwardly-oblique dead white streak across the middle of the submedian interspace, divided into two portions by the submedian fold. *Hindwing*

* *Proteides excellens*, Staudinger, *Iris*, vol. ii, p. 141, pl. ii, fig. 6, male (1889); *Lotongus excellens*, de Nicéville and Martin, *Journ. A. S. B.*, vol. lxi, pt. 2, p. 542, n. 692 (1896); *id.*, Elwes and Edwards, *Trans. Zool. Soc. Lond.*, vol. xiv, p. 233 (1897).

with a large discal dead white patch placed well outside the discoidal cell, its inner and outer edges irregular, especially the latter, commencing just posterior to the costal nervure and ending on the submedian fold. *Antennae, head, palpi, body, and legs* dark brown. FEMALE, *both wings* broader than in the male. UPPERSIDE, *forewing* with the translucent spots similar but larger; four instead of two or three subapical dots, the two posterior ones parallel with the outer margin; an additional oval small opaque pale yellow spot placed anteriorly against the middle of the submedian nervure. *Hindwing* with the base and middle of the wing clothed with long pale ochreous setae between the veins. UNDERSIDE, *both wings* much as in the male.

Differs from "*Hesperia*" *mythea*, Hewitson, the female [?] of which is figured by Distant in Rhop. Malay., p. 377, n. 1, pl. xxxv, fig. 7, *female* (1886), from Malacca, but is found also in Perak and N.-E. Sumatra, in having the translucent spots of the forewing white instead of pale yellow (though Hewitson describes them as white) and more numerous, with an additional white streak in the submedian interspace on the underside of that wing; the discal white patch on the underside of the hindwing is also much smaller and with more irregular edges. From the shape of the wings I should judge the type specimen to have been a male, but Mr. Distant says it is a female. Hewitson when describing it does not give the sex of the same specimen which constitutes the type of the species and genus *Zea*, which latter Messrs. Elwes and Edwards sink under *Lotongus*.

Described from three males and one female received from the capturer, the late Herr C. Ribbe, who calls it "*Pamphila taprobana*," a species unknown to me.

24. ITON AZONA, Hewitson, pl. AA, fig. 35, ♂.

Hesperia azona, Hewitson, Trans. Ent. Soc. Lond., third series, vol. ii, p. 490, n. 11 (1866).

HABITAT: Celebes.

EXPANSE: ♂, 2·3 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* very dark brown or fuscous. *Forewing* with the following translucent lustrous white spots:—three conjoined subapical equal-sized rounded dots, the posteriormost spot nearer the outer margin than the others; a cordate spot towards the base of the second median interspace; a rather

larger quadrate spot near the middle of the first median interspace. *Hindwing* with a large oval anal snow-white patch, anteriorly crossed by two veins of the ground-colour. *UNDERSIDE*, *forewing* marked as on the upperside. *Hindwing* with the anal white area considerably larger than on the upperside, and extending a little way along the abdominal margin. *Cilia* of the forewing fuscous; of the hindwing anteriorly fuscous, posteriorly snow-white. *Antennæ*, *palpi*, *head*, *thorax*, and *abdomen* at the base fuscous; posterior two-thirds of the abdomen snow-white, tipped with fuscous.

At present there are two species only in the genus *Iton**—" *Hesperia*" *semamora*, Moore (= *Hesperia barea*, Hewitson), which has in the male a tuft of hair turned forwards on the underside of the forewing on the sutural area towards the base of the wing, and " *Parnara*" *watsonii*, de Nicéville, which lacks this male secondary sexual character. *I. azona* agrees with the latter in this respect, but differs from both species in having the antennæ very perceptibly longer; the whip-like tip to the crook also longer. In markings it is nearest to *I. semamora*; on the underside, however, the ground-colour is wholly black; in *I. semamora* the costa and apex of the forewing and the hindwing have the ground-colour ochreous; on the hindwing also the white area is very much smaller in *I. azona*. Mr. Hewitson's description of the species is very short, being of four lines only; he gives its expanse as 2 inches, the habitat Macassar. Mr. Francis A. Heron, of the British Museum, has kindly compared the drawing here reproduced with the type, and says that it well agrees therewith.

Described from a single example sent to me by the collector, Herr H. Fruhstorfer, from Patoenoeang or Patanuang in South Celebes.

Genus *STIMULA*, n. n.

I propose this name for the genus *Watsonia*, Elwes and Edwards, Trans. Zool. Soc. Lond., vol. xiv, p. 220 (1897), which is preoccupied by the Marquis L. de Folin in the *Mollusca* (1879); type " *Watsonia swinhoei*, Elwes and Edwards. I have received a single male of this species from the Khasi Hills from Mr. E. Swinhoe, and two males from Hsipaw, North Shan States, captured by Major F. B. Longe, R.E. Superficially it hardly differs from *Kerana diocles*, Moore, but has the wings narrower, the antennæ shorter, the lower

* *Iton*, de Nicéville, Journ. Bomb. Nat. Hist. Soc., vol. ix, p. 399 (1895).

discoidal nervule of the forewing arising slightly nearer to the upper discoidal than to the third median nervule, in *Kerana* this vein arises much nearer to the third median than the upper discoidal nervule, and the second median nervule arising nearer to the third than in *K. diodes*. The type species appears to be confined to the Khasi Hills and Upper Burma. According to Captain E. Y. Watson, this genus would come into Section C of the subfamily *Pamphilinae*, while the genus *Kerana* comes into Section B, these sections being mainly based on the position of vein 5 (the lower discoidal nervule) of the forewing, *rule* Proc. Zool. Soc. Lond., 1893, p. 70.

EXPLANATION OF THE PLATES.

PLATE X.

- | | | | | | |
|------|----|---|-----------------------|-----|------------|
| Fig. | 1. | <i>Euploea</i> (<i>Crastia</i>) <i>core</i> , Cramer. | Upperside | ... | ♂, p. 131. |
| " | 2. | " " | Underside | ... | ♂, p. 131. |
| " | 3. | " (<i>Trepsichrois</i>) <i>linnaei</i> , Moore. | Left-hand | | |
| | | | upper- and underside | | ♂, p. 131. |
| " | 4. | " " " " | underside, | | |
| | | | both wings, neuration | | ♂, p. 131. |
| " | 5. | <i>Elymnias</i> (<i>Melynius</i>) <i>exclusa</i> , de Nicéville | | ... | ♂, p. 135. |
| " | 6. | " " <i>neolais</i> , n. sp. | | ... | ♀, p. 136. |

PLATE Y.

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|---------|--|--------|------------|
| Fig. 7. | <i>Elymnias (Melynius) laisidis</i> , de Nicéville | ... | ♀, p. 137. |
| „ 8. | „ „ <i>lais</i> , Cramer | ... | ♀, p. 137. |
| „ 9. | <i>Mycalesis (Physocon) pandaea</i> , Hopffer | ... | ♂, p. 134. |
| „ 10. | <i>Discophora deo</i> , n. sp. | ... .. | ♂, p. 137. |
| „ 11. | <i>Cethosia narmadoides</i> , de Nicéville | ... | ♂, p. 138 |
| „ 12. | <i>Rhinopalpa callonice</i> , Fruhstorfer | ... | ♂, p. 139. |

PLATE Z.

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|----------|--------------------------------------|-----|-----|-----|------------|
| Fig. 13. | <i>Charaxes keianus</i> , Rothschild | ... | ... | ... | ♂, p. 140. |
| " 14. | " " " | ... | ... | ... | ♀, p. 140. |
| " 15. | <i>Gerydus longeana</i> , n. sp. | ... | ... | ... | ♂, p. 141. |
| " 16. | " " " | ... | ... | ... | ♀, p. 141. |
| " 17. | <i>Logania watsoniana</i> , n. sp. | ... | ... | ... | ♂, p. 143. |
| " 18. | " " " | ... | ... | ... | ♀, p. 143. |

PLATE Z—contd.

Fig. 19.	<i>Cyaniris cara</i> , n. sp.	...	...	...	♂, p. 143
" 20.	" " "	...	...	...	♀, p. 143
" 21.	<i>Lampides lunata</i> , n. sp.	...	...	...	♂, p. 145
" 22.	" " "	...	...	...	♀, p. 145
" 23.	<i>Lycænesthes turneri</i> , Miskin	...	...	...	♂, p. 146
" 24.	" " "	...	...	...	♀, p. 146
" 25.	<i>Hypothecia honos</i> , n. sp.	...	...	...	♀, p. 150
" 26.	<i>Camena cameria</i> , n. sp.	...	...	...	♂, p. 148

PLATE AA.

" 27.	<i>Deudorix gætulica</i> , de Nicéville	...	...	...	♀, p. 148
" 28.	<i>Zinaspia zana</i> , n. sp.	...	...	...	♀, p. 149
" 29.	<i>Ixias pyrene</i> , Linnæus.	Upperside.	Gynandro-		
			morphous example.		p. 152
" 30.	" " "	Underside	"		p. 152
" 31.	<i>Papilio (Panygerana) nyx</i> , de Nicéville	...	...	♀, p. 156	
" 32.	<i>Lotongus onara</i> , Butler	...	...	♂, p. 156	
" 33.	<i>Zea mytheoides</i> , n. sp.	...	...	♂, p. 157	
" 34.	" " "	...	...	♀, p. 157	
" 35.	<i>Iton azona</i> , Howitson	...	...	♂, p. 158	